PLISETSKAYA, E.M.

Some functional features of smooth muscles in bony fishes [with summary in English]. Izv.AN SSSR.Ser.biol. no.4:439-445 Jl-Ag '58 (MIRA 11:8)

1. Institut evolyutsionnoy fiziologii im. I.M. Sechenova Akademii nauk SSSR, Leningrad.
(TELEOSTEI)
(VISCERA--INNERVATION)

PLISETSKAYA, E. M.

PLISETSKAYA, E.M.

Artificial breeding of tadpoles under laboratory conditions [with summary in English]. Biul.eksp.biol. i med. 43 no.6:107-108 Je '57. (MIRA 10:10)

1. Iz Instituta evolyutsionnoy fiziologii imeni I.M.Sechenova (dir. akademik L.A.Orbeli) AN SSSR, Leningrad. Predstavlena deystvitel'nym chlenom AMN SSSR L.A.Orbeli.

(FROGS AND TOADS,
breeding of tadpoles in laboratory cond. (Rus))

L 29171-66

ACC NR: AP6018887 SOURCE CODE: UR/0385/65/001/002/0138/0144

AUTHOR: Leybson, L.G.; Plisetskaya, E. M.; Ogorodnikova, L.G.

ORG: Laboratory of the Evolution of Endocrine Functions, Institute of Evolutionary Physiology and Biochemistry im. I. M. Sechnov, AN SSSR, Leningrad (Laboratoriya evolyutsii endokrinnykh funktsiy Instituta evolyutsionnoy fiziologii i biokhimii, AN SSSR)

TITLE: Permeability of embryonic muscle to pentoses and the effect of insulin

SOURCE: Zhurnal evolyutsionnoy biokhimii i fiziologii, v. 1, no. 2, 1965, 138-144

TOPIC TAGS: muscle physiology, experiment animal, carbohydrate, hormone, endocrinology

ABSTRACT: The sartorius muscles were isolated from 13-17-day old chick embryos and 1-5 day old chicks. One of the pair of muscles was placed in a 300 mg % solution of a pentose (l-arabinase or d-xylase) and the other was placed in the same solution with the addition of 0.1 units of insulin milliliter. The concentration of pentose passing from the solution into the muscles reached a maximum after one hour. This maximum did not depend on age. Insulin showed no effect either on the maximum amount of pentose passing from the solution into the muscle or on the rate of penetration, and this held equally true for embryos less than 15 days old and older embryos. The results call into question the assumption that the stimulative effect of insulin on glucose absorption by muscles of embryos older than 15 days should be attributed to the effect of the hormone on the permeability of the membrane. Orig. art. has: 6 figures and 1 table. [JPRS]

SUB CODE: 06 / SUBM DATE: 25Sep64 / ORIG REF: 006 / OTH REF: 014

Card 1/1 PB UDC: 612.744: 577.95/612.018:612.349

PLISETSKAYA, E.M.

Neural regulation of the formation of heterophilic antibodies. Nauch. biul. Len. un. no.32:30-36 '54. (MLRA 10:4)

1. Laboratoriya fiziologii nervnoy sistemy Fiziologicheskogo instituta im. A.A. Ukhtomskogo.
(HEMAGGLUTININ) (NERVOUS SYSTEM)

PA - 2944

AUTHOR PLISETSKAYA E.M.

TITLE Intestine and Bladder Musculature of a Frog in the Ontogenesis, as acted upon by Acetylcholin and Adrenalin. (Vliyaniye atsetilkholina i adrenalina na muskulaturu kishechnika i mochevogo puzyrya lyagushki v ontogenese.- Russian)

PERIODICAL Doklady Akademii Nauk SSSR 1957, Vol 113, Nr 1, pp 223-226 (U.S.S.R.)

Received: 6/1957 Reviewed: 7/1957

ABSTRACT The complex double effect of vegetative nerves and their mediators is said to have slowly developed in the course of evolution. On this occasion a distinct irritation of the nerves as well as of their mediators took place in an earlier period of the phylogenetic evolution. The question arises whether this regularity is also repeated in the ontogenesis of cold-blooded animals. The involuntary muscles of the rectum and of the bladder of tadpoles and young frogs were selected as material and the two organs were dissected out. The stages of development were denoted as 20-31 by Terentyev. No peristaltic motions are visible before slipping out (stage 20) also in the case of an action of both chemicals in any concentration. With the growth of the tadpole (stage 21: formation of mouth-aperture

CARD 1/3

Intestine and Bladder Musculature of a Frog in the Ontogenesis, as acted upon by Acetylcholin and Adrenalin.

and the transperancy of the cornea) the first twitchings occur also without any chemical influence. In the course of stages 24-26 (period of 18 to 25 days) contractions occur much more often, and after this the ryhthm of the contractions slows down until about the beginning of the metamorphosis. Also the isolated urinary bladder shows slow contractions every 5 - 6 minutes, which last for 60 - 100 seconds. After chemical substances had begin to act, acetylcholine in a concentration of 10^{-5} showed to cause some quick contractions with a quick return to normal only in two cases. Beginning with stage 22, the contractions become a normal appearance. Adrenaline has a similar effect.
The Results of later stages show that in an earlier stage of development of the ontogenesis of batrachians acetylcholine and adrenaline have a similar stimulating effect on the musculature of the rectum. The urinary bladder as an organ which develops later in ontogenesis is sensitive to stimulating effects of both substance also in the case of full-grown frogs.

CARD 2/3

Intestine and Bladder Musculature of a Frog in the Ontogenesis, as acted upon by Acetylcholin and Adrenalin. PA - 2944

No potentiating influence of acetylcholine and of adrenaline was observed.
(2 tables and 15 citations from publications.)

ASSOCIATION: Institute for Evolutionary Physiology I.M. Sechenova of the Academy of Science of the USSR. (Institut evolutsionnoy fiziologii im. I.M. Sechenova Akademii Nauk SSSR.)
PRESENTED BY: L.A. Orbeli, Member of Academy.
SUBMITTED: 16.11. 1956.
AVAILABLE: Library of Congress.

CARD 3/3

PLISETSKAYA, E.M.; LEYBSON, L.G.; STABROVSKIY, Ye.M.

Effect of adrenaline on some aspects of carbohydrate metabolism in cyclostomatous and cartilaginous fishes. Fiziol.zhur. 50 no.1: 117-122 Ja '64. (MIRA 18:1)

1. Institut evolutsionnoy fiziologii imeni I.M.Sechenova AN SSSR, Leningrad.

LEYBSON, L.G.; PLISETSKAYA, E.M.

Effect of insulin on the glucose absorption by embryonic muscles. Dokl. AN SSSR 150 no.1:207-210 My '63. (MIRA 16:6)

1. Institut evolyutsionnoy fiziologii im. I.M.Sechenova AN SSSR. Predstavleno akademikom V.N.Chernigovskim.
(INSULIN) (GLUCOSE) (MUSCLE)

USSR / Human and Animal Physiology. Neuromuscular Physiology. T

Abs Jour : Ref Zhur - Biol., No 15, 1958, No 70495

Author : Plisetskaya, E. M.
Inst : Academy of Sciences USSR
Title : The Influence of Acetylcholine and of Adrenalin on the Musculature of the Intestine and the Urinary Bladder of the Frog in Ontogenesis

Orig Pub : Dokl. AN SSSR, 1957, Vol 113, No 1, 223-226

Abstract : Experiments were run on frogs at various stages of growth. The first very weak and infrequent to-and-fro contractions of the intestine (the time required for three contractions ranged from 100-340 sec.), and separate circular contractions, were always seen during the transition from the 20th to the 21st stages of growth (after hatching). During the 24th to 26th stages (a period lasting 18 to 25 days) the rhythm of contractions became noticeably more

Card 1/3

frequent, and then gradually slowed again. The isolated urinary bladder, also, from time to time exhibited slow contractions, gradually incorporating the entire musculature of the organ. The intervals between these reached five to six minutes, and the duration of a single contraction was 60-100 sec. During the transition from the 20th to the 21st stages of growth, the use of acetylcholine (I) and of adrenalin (II) remained without effect. Beginning with the 22nd stage, there gradually emerged a reaction to I and II. The threshold concentration of I was 10^{-6} to 10^{-7}. In stages 22 to 26 I led to a strengthening or increasing frequency (of $1\frac{1}{2}$-2 times) of the automatic contractions. Following removal of the substance, the tonus fell and the automatic movements returned to normal. In the course of the 22nd to 26th stages of growth II, like I, exerted a stimulating effect on the

PLISETSKAYA, E.M.

Modern data on the submicroscopic structure of neuromuscular synapses. TSitologiia 3 no. 1:20-33 Ja-F '61. (MIRA 14:2)

1. Laboratoriya evolyutsii nervno-myshechnoy funktsii Instituta evolyutsionnoy fiziologii AN SSSR, Leningrad.
(MUSCLES—INNERVATION)

USSR / Human and Animal Physiology. Neuromuscular Physiology. T

Abs Jour : Ref Zhur - Biol., No 15, 1958, No. 70493

Author : Plisatskaya, E. M.
Inst : Academy of Sciences USSR
Title : The Problem of the Functional Properties of the Smooth Muscle of the Intestines of Poikilothermic Vertebrates

Orig Pub : Dokl, AN SSSR, 1957, Vol 114, No 6, 1324-1327

Abstract : Stimulation of the sympathetic trunk in the pike produced contraction of the longitudinal musculature of the posterior intestine lasting for one to three min. The latent period was occasionally as long as 30 sec. In frogs stimulation led to a gradual reduction in tonus, accompanied by weakening or cessation of movement. By two to seven minutes after conclusion of the stimulus, the tonus returned to its original state. Stimulation of the seventh anterior nerve roots, which contain sympathetic fibers,

Card 1/3

AUTHOR: Plisetskaya, E. M.

TITLE: Concerning the Problem of the Functional Properties of Smooth Muscles of the Intestine of Poikilothermal Vertebrates (K voprosu o funktsional'nykh svoystvakh gladkoy muskulatury kishechnika kholodnokrovnykh pozvonochnykh)

20-114-6-53/54

PERIODICAL: Doklady AN SSSR, 1957, Vol. 114, Nr 6, pp. 1324-1327 (USSR)

ABSTRACT: In order to investigate the functional changes occurring in the course of phylogenesis in the smooth muscles and in their innervation, the author studied some properties of the nerve-muscle-apparatus of the sower portion of intestine in various classes of the above-mentioned animals. She investigated the vegetative innervation in the motor function of Teleostae (pike - Esox lucius) and of tailless Anura (frogs: Rana temporaria and R. ridibunda); the reactivity of the smooth muscles toward several pharmacological effective materials were studied in Teleostae (Esox lucius, Perca fluviatilis, Carassius carassius, Rutilus rutilus), tail Anura (salamander - Triturus vulgaris), tailless Anura (the same species of

Card 1/5

frogs) and reptiles (turtles: Emys orbicularis, Testudo horsfieldi). According to published data (references 4, 5) Teleostae lack the sacral section of the parasympathetic nervous system. The musculature of the lower section of the intestine is apparently only innervated by sympathetic fibers. A sacral parasympathetic innervation is developed in Anura (references 2, 3 and others). The intestine of the test animals was exposed by opening the abdominal cavity. The rectum was separated from the mid-intestine and the small intestine respectively, a thread was drawn through and connected to a myograph. The sympathetic chain of the fish was stimulated at the level of the 21st - 23rd vertebra. The chain was cut above this place. In frogs the chain was cut above the fourth sympathetic node and the section between the 4th and 5th node was stimulated. In the tests with the 7th and 10th roots of the frog the spinal canal was opened, the root pinched off with ligatures and separated as near as possible to the point of branching off from the spinal cord. The sympathetic chain or the peripheral section of the front roots was laid on platinum--electrodes and stimulated by current from an induction-

-coil. The isolated rectum was stretched in a Shyuller (Schüller-) solution between a hook melted into the wall of the vessel and a light myograph. The reaction of the smooth musculature to nervous stimulation. The stimulation of the sampathetic boundary-trunk in the pike led to a contraction of the longitudinal musculature of the rectum which lasted 1 - 3 minutes (figure 1). The stimulation of the chain in the frog gradually reduced the tonus; the movements were weakened or ceased to exist (figure 2). 2 - 7 minutes after the terminated stimulation the tonus again attained its initial state. In 32 of 74 cases the inhibition was preceded by a muscular contraction of various intensity. The stimulation of the 7th sympathetic root led to similar reactions (references 2, 3). The stimulation of the 9th and both root which contain parasympathetic fibers resulted in a rapid contraction of the musculature of the frog's rectum. The reaction to pharmacological substances. The weakest automatic contractions were to be seen in the pike, the most distinctly marked ones in frogs and pond turtles (Emys orbicularis). Adrenaline (concentration 10^{-11} - 10^{-5})

had an inhibiting action in fish, frogs and turtles. The tonus was lowered, movements ceased (figure 3). In 19 of 144 frogs the inhibition of immersion of the preparation in a solution with threshold concentrations was preceded by a contraction, or the automatic movements began during the influence of adrenaline. Acetyl-choline (10^{-9}), arecoline (10^{-8} - 10^{-4}) and pilocarpine (10^{-8} - 10^{-5}) stimulated the smooth mulsculature of all animals investigated. The reaction to parasympathico-mimetic substances in threshold-concentrations manifested itself in a rapidly passing contraction or in a greater frequency of the automatic movements. Proserine (10^{-9} - 10^{-4}) led to a gradual or rapid increase in tonus with contractions that lasted or grew stronger. It intensified the action of acetylcholine. Atropine (10^{-10} - - 10^{-6}) usually had no influence upon the tonus and automatic contractions. Sometimes they even became scarcer and weaker. The influence of acetylcholine, arecoline and pilocarpine can be removed through atropine. There are 4 figures, and 5 references, 1 of which is Slavic.

PLISETSKAYA, E.M. (Leningrad)

Hormonal regulation of carbohydrate metabolism in Cyclostomi and fishes. Usp. sovr.biol. 57 no.1:128-142 Ja-F '64. (MIRA 17:5)

LEYBSON, L.G.; PERTSEVA, M.N.; PLISETSKAYA, E.M.; OGORODNIKOVA, L.G.

Lactic acid content in chicken embryo muscles in insulin hypoglycemia. Biul. eksp. biol. i med. 3[i.e.53] no.3: 39-43 Mr '62. (MIRA 15:4)

1. Iz laboratorii po izucheniyu endokrinnykh funktsiy i obmena veshchestv (zav. - doktor biologicheskikh nauk L.G.Leybson) Instituta evolyutsionnoy fiziologii imeni I.M.Sechenova (dir. - chlen-korrespondent AN SSSR Ye.M.Kropa) AN SSSR, Leningrad. Predstavlena deystvitel'nym chlenom AMN SSSR V.A.Engel'gardtom.
(LACTIC ACID) (MUSCLES) (INSULIN SHOCK)

PLISETSKAYA, E.M., OGORODNIKOVA, L.G., ZHELUDKOVA, Z.P., LAVSON L.G., PERTSEVA, M.N. (USSR)

"Effected of Insulin on the Carbohydrate Metabolism of the Chick Embroy."

Report presented at the 5th Int'l. Biochemistry Congress, Moscow, 10-16 Aug 1961.

PLISETSKAYA, E.M.

Some physiological properties of smooth muscles in amphibians and reptiles. Mat. po evol. fiziol. 3:199-208 '58. (MIRA 12:4)
(MUSCLE) (AMPHIBIA) (REPTILES)

PLISETSKAYA, E.M.

PLISETSKAYA, E.M.

Functional properties of smooth muscles of the intestine in poikilothermal vertebrates. Dokl. AN SSSR 114 no.6:1324-1327 Je '57. (MLRA 10:9)

1. Institut evolyutsionnoy fiziologii imeni I.M.Sechenova. Predstavleno akademikom L.A.Orbeli.
(INTESTINES) (REPTILES) (AMPHIBIA)

BULANOVA, N.K.; PLISETSKAYA, M.A. (Moskva)

Improvement of working conditions on the vibrating conveyer section. Gig.truda i prof.zab. 3 no.4:42-44 Jl-Ag '59. (MIRA 12:11)

1. Sanitarno-epidemiologicheskaya stantsiya Leningradskogo rayona.
(CLOCKMAKING AND WATCHMAKING--HYGIENIC ASPECTS)

PLISETSKAYA, M.A.

BULANOVA, N.K.; KERTSMAN, L.I.; PLISETSKAYA, M.A.; SOKHOR, N.M.

Medical and sanitary services for industrial workers of Leningrad District in Moscow. Zdrav.Ros.Feder. 1 no.6:11-15 Je '57. (MLRA 10:8)

1. Iz sanitarno-epidemiologicheskoy stantsii Leningradskogo rayona Moskvy

(MOSCOW--INDUSTRIAL HYGIENE)

PLISETSKIY, M.

Plisetskiy, M. "From whom and how man originated," Molodoy Bol'shevik, 1949, No. 11, p. 57-66

SO: U-5241, 17 December 1953, (Letopis 'Zhurnal 'nykh Statey No. 26, 1949)

PLISETSKIY, M. M.

Dissertation defended for the degree of Doctor of Historical Sciences at the Institute of Ethnography imeni N. N. Miklukho-Maklay

"Russian-Ukrainian Interrelationships in the Field of the Heroic Epos of the Fuedal Epoch (Studies on the History of the East-Slavic Epos)."

Vestnik Akad. Nauk, No. 4, 1963, pp 119-145

PLISETSKIY, M.M.

Interrelation of folklore of the Don and Zaporozh'ye Cossacks (development of Russian-Ukrainian folklore interrelations). Sov. etn. no.3:19-30 '54. (MLRA 7:11)
(Folklore, Cossack) (Folklore, Zaporogian)

PLISETSKIY, M. S.

27042. PLISETSKIY, M. S. - Ob antropologicheskikh vzglyadakh A. N. Radishcheva. Sov. etnografiya, 1949, No. 3 s. 178-82.

SO: Letopis' Zhurnal'nykh Statey, Vol. 36, 1949.

PLISETSKII, MAREK SOLOMONOVICH,

Plisetskii, Marek Solomonovich, Nauka o pochodzeniu czlowieka; prezekl. D. Jrazabka. Warszawa, Ksiazka i Wiedza, 1951. (The theory of man's origin. 62 illus., notes (in separate suppl.)

SO: Monthly list of East European Accessions, LC, Vol. 3, No. 1, Jan. 1954, Uncl.

SO: Monthly List of Russian Accessions, Library of Congress, _____1953, Uncl.

PLISETSKIY, M. S.

Neanderthal Race

So-called Neanderthal burials. Sov. etn. no. 2, 1952.

9. **Monthly List of Russian Accessions**, Library of Congress, September 1953. Unclassified.

PLISETSKIY, M.S.

How one should not interpret the history of biology. Biul.MOIP. Otd. biol. 91-96 Mr-Ap '54. (MLRA 7:6)
(Biology)

PLISETSKIY, M.S., kandidat istoricheskikh nauk

An unfortunate pamphlet. ("Science and religion on the origin of man." K. Vasil'ev. Reviewed by M. Plisetskii). Nauka i zhizn' 22 no.5:60 My '55 (MLRA 8:6)
(Vasil'ev, K.)(Religion and science)(Man--Origin)

PLISETSKIY, Mark Solomonovich, kandidat istoricheskikh nauk; KOVTUN, I.I., redaktor; DMITRIYEVA, R.V., tekhnicheskiy redaktor.

[How the knowledge of the origin of man developed in the struggle with religion] Kak v bor'be s religiei razvivalas' nauka o proiskhozhdenii cheloveka. Moskva, Izd-vo "Znanie," 1955. 31 p. (Vsesoiuznoe obshchestvo po rasprostraneniiu politicheskikh i nauchnykh znanii. Ser.2, no.32) (MLRA 8:9)
(Man--Origin)

PLISETSKIY, M.S.

SUBJECT: USSR/The Origin of Man 25-4-29/34

AUTHOR: Uryson, M.I., Candidate of Biological Sciences

TITLE: The Origin of Man (Proiskhozhdeniye Cheloveka)

PERIODICAL: Nauka i Zhizn' - April 1957, # 4, pt 61, (USSR)

ABSTRACT: The author gives a critical report about a recently published book: "MAN AND HIS RACES" (Chelovek i Yego Rasy), written by M.S. Plisetskiy. It deals with the origin of man based on the latest results of scientific research. It is aimed at enlightening readers with facts and theories in the atheistic-materialistic spirit. The origin of racism is said to have grown out of imperialism and colonialism. The book is recommended to all readers interested in natural sciences as being easy to understand and popularly written.

This article contains one illustration.

ASSOCIATION:

PRESENTED BY:

SUBMITTED:

AVAILABLE: At the Library of Congress.

Card 1/1

FLIGETSKIY, V.M., inzh.

Operational reliability of a turbine under conditions of expanded maintenance. Elek. sta. 35 no.3:79-80 Mr '64. (MIRA 17:6)

MOKIN, V.A., inzh.; PLISETSKIY, V.M., inzh.

Improvement in the operation of cooling towers. Energetik 12 no.1:14-16 Ja '64. (MIRA 17:3)

PLISETSKIY, V.M.

Utilization of cooling water behind the condensers of steam turbine. Energetik 8 no.1:11-12 Ja '60.
(MIRA 13:5)

(Steam turbines)

PLISETSKIY, Z. N.

USSR/Medicine - Brucellosis Aug 49
Spine, Diseases

"Brucellosis of the Spine," Lt Col I. I. Shushkovskiy, Med Corps, Cand Med Sci, Z. N. Plisetskiy, Chair of First Sugr Med Faculty, X-Ray Cabinet, Omsk Oblast Clinical Hosp, 6 pp

"Khirurgiya" No 8

Spinal brucellosis, usually in patients over 40, accounts for 24% of brucellosis cases requiring surgical intervention. Among its symptoms are partial sclerosis and deformation of vertebras along with the formation of intervertebral fibrocartilage with the disk remaining normal. In diagnosing positive brucellosis reactions, blood analysis and brucellosis anamnesis are necessary. Successful treatment includes use of vaccine, sulfa preparations, autohemic and physical therapy. Dir, Chair of First Surg Med Faculty: Prof M. S. Rabinovich. Chief, X-Ray Cabinet: Z. N. Plisetskiy. Chief Physician, Omsk Oblast Clinical Hosp: I. R. Sokol'skiy.

FDD PA 1/50T68

PLISETSKIY, V.M., inzh.

Conversion of the PT-25-90 turbine to operation on decreased vacuum. Energetik 12 no.6:10-12 Je '64. (MIRA 17:9)

24.4400

S/021/62/000/003/005/010
D251/D302

AUTHOR: Plish, A.F.

TITLE: Integral representation of the Bethe-Salpeter amplitude

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Dopovidi, no. 3, 1962, 344 - 349

TEXT: The author states that the integral representation of the Bethe-Salpeter amplitude found by M. Ida (Ref. 1: Prog. Theor. Phys. v. 23, 1151, 1960) cannot be considered as giving full information about its analytic properties as functions of invariants. He therefore seeks an integral representation of this amplitude on the basis of the more general representation of the vacuum expectation value of a double commutator found by R.F. Streater (Ref. 4: Proc. Roy. Soc., v. 256, 39, 1960). Using Ida's notation, the author considers, not the Bethe-Salpeter amplitude itself, but the delayed and advanced amplitudes. By using Streater's results, applying a Fourrier transformation, introducing further results involving the carrier-weight function and applying the stability condition, a

Card 1/2

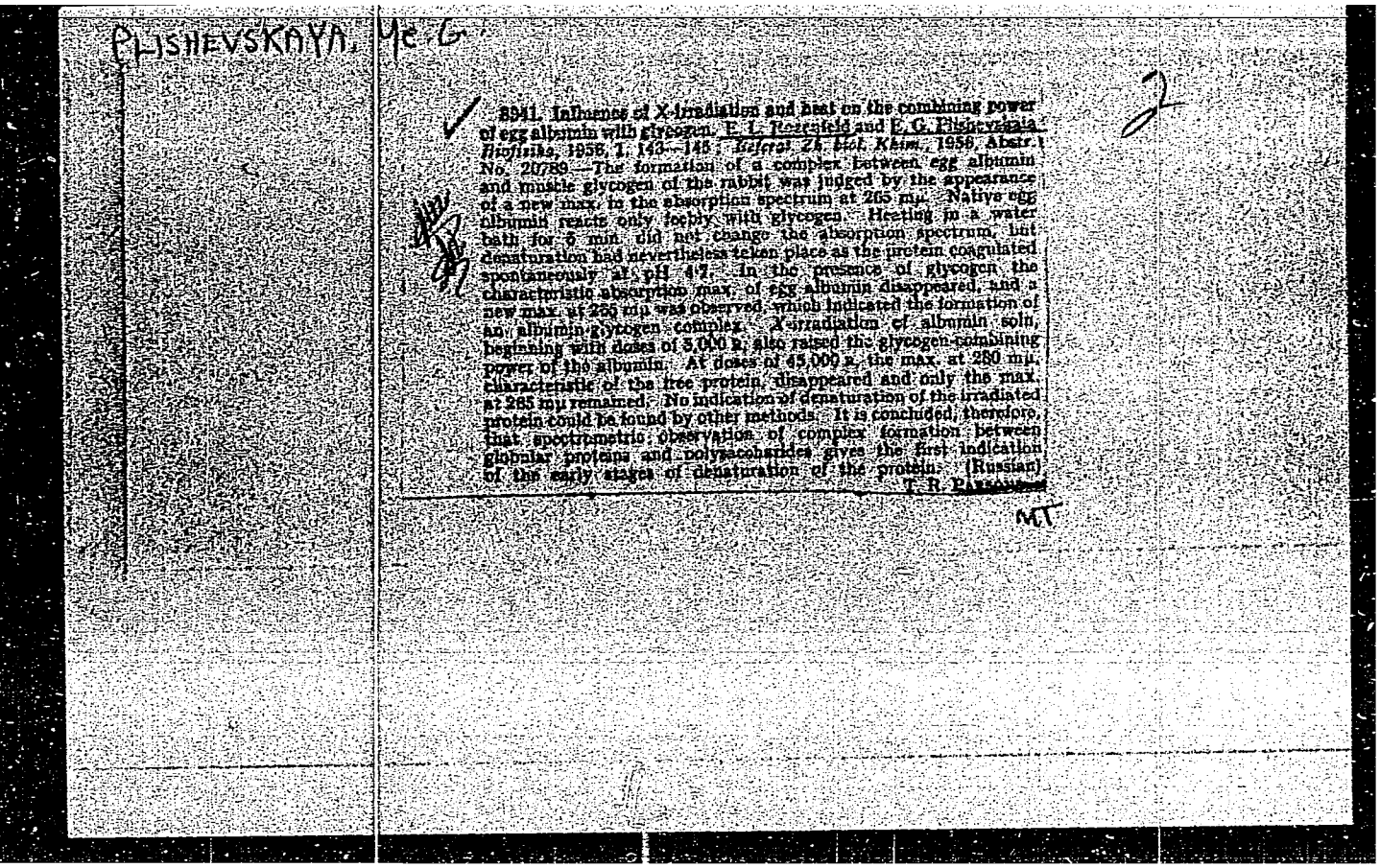
PLISH, A.I'.

Integral representation of the Bethe-Salpeter amplitude. Dop. AN URSR no.3:344-349 '62. (MIRA 15:5)

1. Institut matematiki AN USSR. Predstavleno akademikom AN USSR Yu.A.Mitropol'skim [Mytropol's'kyi, IU.O.].
(Quantum field theory) (Calculus, Integral)

PLISH, A.F.

Spectral representation for the Bethe-Salpeter amplitude. Ukr. mat. zhur. 14 no.3:337-340 '62. (MIRA 15:9)
(Functions, Theta) (Matrices)



PLISHEVSKAYA, Ye. G.

2941. Influence of X-irradiation and heat on the combining power of egg albumin with glycogen. E. L. Tsarfaiti and E. G. Plishevskaia. *Biofizika*, 1956, 1, 143–148; *Referat. Zh. Biol. Khim.*, 1958, Abstr. No. 20789.—The formation of a complex between egg albumin and muscle glycogen of the rabbit was judged by the appearance of a new max. in the absorption spectrum at 285 mμ. Native egg albumin reacts only feebly with glycogen. Heating in a water bath for 5 min did not change the absorption spectrum, but denaturation had nevertheless taken place as the protein coagulated spontaneously at pH 4.7. In the presence of glycogen the characteristic absorption max. of egg albumin disappeared, and a new max. at 285 mμ was observed, which indicated the formation of an albumin-glycogen complex. X-irradiation of albumin soln, beginning with doses of 3,000 R, also raised the glycogen-combining power of the albumin. At doses of 45,000 R, the max. at 280 mμ, characteristic of the free protein, disappeared and only the max. at 285 mμ remained. No indication of denaturation of the irradiated protein could be found by other methods. It is concluded, therefore, that spectrometric observation of complex formation between globular proteins and polysaccharides gives the first indication of the early stages of denaturation of the protein. (Russian)

T. R. Pavlovskaya

DLOUHA, H.; KRAUS,M.; KRECEK,J.; PLISKA,V.

Sensitivity of rats to vasopressin in the weaning period.
Physiol. Bohemoslov. 14 no.3:217-224 '65.

1. Institute of Physiology and Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Sciences, Prague.

PLISHKAN', I.P.

Accountancy staff in a railroad division. Put' i put. khoz. 7 no.6:14 '63. (MIRA 16:7)

1. Glavnyy bukhgalter distantsii, Khust, L'vovskoy dorogi.
(Railroads—Accounting)

STARSHINOV, B.N.; PLISKANOVSKII, S.T.; PONOMAREVA, K.Ye.; GAYEVAYA, O.S.; SINITSKAYA, S.K.; PALAGUTA, V.P.

Results of investigating the final slags used in the smelting of converter and foundry cast iron in conditions of the Azovstal' plant. Sbor.trud. UNIIM no.[illegible]66-79 '65. (MIRA 18:11)

BOLTINSKIY, V.N., akademik; GENIKHOVICH, M.I.; KOGAN, Ye.A.; NIKIFOROV, P.Ye. PLISHKIN, A.A.; POLYAK, A.Ya.; SOLOVEYCHIK, A.G.; FILIPPOV, A.I.; [redacted]; YAKOBI, M.A.

Performance of machine-tractor units at increased speeds. Mekh. i elek.sots.sel'khoz. 17 no.3:1-19 '59. (MIRA 12:8)

1. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk im. Lenina (for Boltinskiy).
(Agricultural machinery)

PLISHKIN, A. A. (Engr)

PLISHKIN, A. A. (Engr) -- "Experimental Investigation of Forces, Acting in a Mounted Plow." Sub 10 Jun 52, Joint Sci Council of VIM and VIESKh. (Dissertation for the Degree of Candidate in Technical Sciences)

SO: Vechernaya Moskva, January-December 1952

PLISHKIN, A.A., kand. tekhn. nauk; TRUFANOV, V.V., inzh.

Establishing a complex of tillage machines and implements for areas subjected to wind erosion. Trakt. i sel'khozmash. 33 no.7:22-24 Jl '63. (MIRA 16:11)

PLISHKIN, A.A., kand.tekhn.nauk

Dynamometry of mounted plows. Mekh. i elek. sots. sel'khoz. 19 no.1:14-18 '61. (MIRA 14:3)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut mekhanizatsii sel'skogo khozyaystva.
(Plows—Testing)

A. A. Plishkin.

Obrabotka Pochvy Na Tselinnykh I Zalezhnykh Zemlyakh (Preparation of Ground in New and Waste-Land Soil, By)

Ya. A. Minin, P. Ye. Nikiforov, I A. A. Plishkin.

Moskva, Sel' Khozgiz, 1955.

55 P. Illus., Diagrs., Tables

(Peredovog Opyt V Sel' Skom Khozyaystve)

PLISKIN, B., podpolkovnik

Methods of astronomical orientation. Voen. vest. 42 no.4:
78-79 Ap '63. (MIRA 17:1)

PLISHKIN, D.N., zasluzhennyy vrach RSFSR

Some data characterizing patients with gonotthea. Vest. derm i ven. 37 no.7:73-74 Jl '63 (MIRA 16:12)

1. Sverdlovskiy gorodskoy kozno-venerologicheskiy dispanser.

PLISHKIN, D.N., zasluzhennyy vrach RSFSR

Characteristics of skin diseases in Sverdlovsk in 1957. Vest.derm.i ven. 33 no.4:36-38 Jl-Ag '59. (MIRA 12:11)

1. Iz Sverdlovskogo gorodskogo kozhno-venerologicheskogo dispansera (glavnyy vrach D.N. Plishkin).
(SKIN DISEASES, statistics)

PLISHKIN, D.N.

Skin disease in children in Sverdlovsk in 1958. Vest.derm.i ven. 34 no.6:27-30 '60. (MIRA 13:12)

1. Iz Sverdlovskogo gorodskogo venerologicheskogo dispansera (glavnyy vrach D.N. Plishkin).
(SVERDLOVSK—SKIN—DISEASES)

PLISHKIN G. M.

ORLOV, A. N. and PLISHKIN, G. M.

"Equilibrium Conditions of One Demensional Model of a Crystal."

paper presented at the Conf. on Mechanical Properties of Non-Metallic Solids, Leningrad, USSR, 19-26 May 58.

Institute of Physics of Metals of the Academy of Sciences of the USSR, Sverdlovsk.

PLISHKIN, N.

Further development of welding in ship repairing yards.
Mor. flot. 24 no.5:31-32 My '64. (MIRA 18:12)

1. Starshiy inzh.-tekhnolog po svarke Kanonerskogo sudoremontnogo zavoda.

PLISHKIN, N.N.

Automatic butt welding of bronze casings for marine propeller shafts. Sudostroenie 28 no.7:53-55 Jl '62. (MIRA 15:8)
(Shafting---Maintenance and repair) (Bronze--Welding)

EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(t)/ETI/EWP(k)/EWP(h)/EWP(l) IJP(c)

ACC NR: AP6028100 (N) SOURCE CODE: UR/0229/66/000/004/0043/0046

JD/HM/EM

AUTHOR: Kudryavtsev, I. V.; Savvina, N. M.; Plishkin, N. N.

ORG: None

TITLE: Fatigue strength of propeller shaft models

SOURCE: Sudostroyeniye, no. 4, 1966, 43-46

TOPIC TAGS: fatigue strength, shaft, marine engineering, durability, surface hardening, mechanical property

ABSTRACT: The authors describe automatic weld surfacing of 1Kh18N9T stainless steel wire to marine propeller shafts developed at the Kanonersk Shipbuilding Plant. A study was carried out at the plant to determine the effect of the welded wire on the fatigue strength of marine shafts and whether their durability could be extended by cold surface hardening. Materials and procedures for producing shaft models for fatigue testing are given. The shaft models were tested on the NU-200 resonance machine built by the Central Scientific Research Institute of Technology and Machine Building. The main components of this unit are: oscillator, inertial vibrator with drive, frame, hoisting equipment, engine generator and control panel. A diagram for this unit is given. The results show that welded-on metal lowers the fatigue strength of 180 mm shafts from 20 to 6.5 kg/mm^2. Cold surface hardening of weld surfaced shafts increases

Card 1/2

UDC: 629.12.037.4:539.4

Card 2/2 egh

FD-1666

PLISHKIN, YU. M.

USSR/Electricity - Regulation of nonlinear circuits

Card 1/1 Pub. 10-2/11

Author : Plishkin, Yu. M. (Sverdlovsk)

Title : Problem of evaluating the integral criteria governing the quality of regulation of nonlinear systems

Periodical : Avtom. i telem., Vol. 16, 19-26, Jan-Feb 1955

Abstract : The author utilizes the Lyapunov functions for nonlinear systems of automatic regulation in order to evaluate the integral criteria of quality of regulation. Five references: A. A. Fel'dbaum, "Integral criteria of quality of regulation," ibid., 9, No 1, 1948. N. N. Krasovskiy, "Theorems on the stability of motions defined by a system of two equations," Prikl. mat. i mekh., 16, No 5, 1952. Ye. A. Barbashin, "Stability of solution of a nonlinear equation of the third order," Prikl. mat. i mekh., 16, No 5, 1952. S. N. Shimanov, "Stability of the solution of a nonlinear equation of third order," Prikl. mat. i mekh., 17, No 3, 1953. Ye. A. Barbashin and N. N. Krasovskiy, "Stability of motion in the large," DAN SSSR, 86, No 3, 1952.

Institution : --

Submitted : May 19, 1954

126-3-23/34

AUTHORS: Orlov, A.N., Plishkin, Yu.M. and Shepeleva, I. M.

TITLE: Conditions of equilibrium of an atom chain. (Usloviya ravnovesiya tsepochki atomov).

PERIODICAL: "Fizika Metallov i Metallovedeniye" (Physics of Metals and Metallurgy), 1957, Vol.4, No.3, pp. 540-542 (U.S.S.R.)

ABSTRACT: Simple considerations given in the work of Frenkel', Ya.I. (1) indicate that in an atomic chain, which is not subjected to external forces, all the interatomic distances are equal in the equilibrium position. In a strongly stretched chain the equilibrium configuration of the atoms is non-symmetrical. So far it has not been mentioned that in a sufficiently long chain the disturbance of the ideal periodicity in the form of anomalously large distances between certain atoms corresponds to minimum energy even for an insignificant stretching of the chain. Some of the results are given of investigations of the conditions of stability of an atomic chain with a given type of dependence of the potential energy of the interaction of the nearer neighbouring atoms; the interaction of the distant atoms are not taken into consideration. On the basis of the obtained results it is stated that any conclusion on the disturbance of periodicity in a stressed three-dimensional ideal crystal would be premature. More detailed consideration

Card 1/2

PLISHKIN, Yu. M. and ORLOV, A. N.

"The Results of Theoretical Calculations on Stability Conditions of a Crystal Model."

report presented at the Conference on Investigation of Mechanical Properties of Non-Metals, by the Intl. Society of Pure and Applied Physics and the AS USSR, at Leningrad, 19-24 May 1958.
(Vest, Ak Nauk SSSR, 1958, no. 9, pp. 109-111)

PLISHKIN, Yu. M.

18(7) PHASE I BOOK EXPLOITATION SOV/3355

Akademiya nauk SSSR. Institut metallurgii. Mauchnyy sovet po probleme zharoprochnykh splavov

Issledovaniya po zharoprochnym splavam, t. IV (Studies on Heat-resistant Alloys, vol. 4), Moscow, Izd-vo AN SSSR, 1959. 400 p. Errata slip inserted. 2,200 copies printed.

Ed. of Publishing House: V. A. Klimov; Tech. Ed.: A. P. Guseva; Editorial Board: I. P. Bardin, Academician; G. V. Kurdyumov, Academician; N. V. Ageyev; Corresponding Member, USSR Academy of Sciences; I. A. Oding; I. M. Pavlov, and I. P. Zudin, Candidate of Technical Sciences.

PURPOSE: This book is intended for metallurgists concerned with the structural metallurgy of alloys.

COVERAGE: This is a collection of specialized studies of various problems in the structural metallurgy of heat-resistant alloys. Some are concerned with theoretical principles, some with descriptions of the equipment and methods, others with properties of specific materials. Methods of [illegible] occurring under specified conditions are studied and reported on. For details, see Table of Contents. The articles are accompanied by a number of references, both Soviet and non-Soviet.

TABLE OF CONTENTS:

Card 1/12

PLISHKIN, Yu. M.; LUCHNIK, N.V.; TALUTS, G.G.

Spiral structure of the molecules of desoxyribonucleic acid and the mechanism of their cell-reproduction. Biofizika, 4 no.3:275-283 '59. (MIRA 12:7)

1. Ural'skiy filial AN SSSR, Sverdlovsk.
[redacted]CKYRIBONUCLEIC ACID,
spiral structure & auto-duplication (Rus))

24.7500 1143, 1043, 1160, 1136

S/520/59/000/022/002/021
E032/E414

AUTHOR: Plishkin, Yu.M.

TITLE: A Study of the Stability Conditions for a One-Dimensional Model of a Crystal

PERIODICAL: Akademiya nauk SSSR. Ural'skiy filial, Sverdlovsk. Institut fiziki metallov. Trudy, No.22, 1959, pp.13-25

TEXT: One of the problems in the theory of distorted crystal lattices is to establish the conditions under which the deformation of an ideal lattice leads to the appearance of local distortions. The solution of this problem may throw light on the nature of elementary processes which occur in a lattice subject to plastic deformations. Since a rigorous quantum mechanical solution of the problem is rather difficult, it is stated that even rough qualitative results which can be obtained by semi-classical methods are of definite interest. The present author investigates a one-dimensional model of a crystal in the form of a linear chain of atoms (all of the same kind) and investigates stable configurations when the chain is stretched. M.Born (Ref.1) has shown that when a chain of this type is stretched, a large number of asymmetric

Card 1/4

89649

equilibrium configurations can appear and their energy is lower than the energy of symmetric configurations. The present author investigates this problem in greater detail. A preliminary report was published by A.N.Orlov, the present author and I.M.Shepeleva in Ref.2. It is assumed in the present paper that the potential energy of interaction between the atoms is of the form

$$v(r) = - Ar^{-\mu} + Br^{-\nu} \qquad (1)$$

where A and B are positive, $\nu > \mu > 0$ are constants and r is the interatomic distance. The results obtained are not very dependent on the specific form of v(r). It is only necessary for the function v(r) to have one minimum, one inflexion and a constant value for $r \to \infty$. The equilibrium distance between two atoms not subjected to external forces is given by

$$\ell_o = \left(\frac{\nu B}{\mu A}\right)^{\frac{1}{\nu - \mu}} \qquad (2)$$

A Study of the Stability ...

which is determined from the condition $\partial v/\partial r = 0$. A chain of $N + 1$ atoms having a length $L = N\ell$ is then investigated where ℓ is the average interatomic distance. The potential energy of the entire chain is given by

$$V(x_1, x_2, \ldots x_N) = \sum_{i-1}^{N} v(x_i) \qquad (3)$$

where x_i is the distance between the i-th and the $(i + 1)$-th atoms. If the ends of the chain are fixed then

$$\sum_{i=1}^{N} x_i = N\ell \qquad (4)$$

Minima of the function given by Eq.(3), subject to the condition given by Eq.(4), correspond to stable configuration for given stretching. The results obtained are summarized as follows. The only stable configuration for a compressed or a free chain is the

symmetric configuration. In the case of slightly extended chain the stable configuration is again symmetric. For a moderately extended chain the chain has a symmetric stable configuration and N asymmetric stable configurations of identical form. The energy of an asymmetric stable configuration in this case is lower than the energy of the symmetric configuration in a large part of the range of ℓ - values. The absolute magnitude of the force which is necessary to maintain the chain in a configuration including a discontinuity is considerably smaller than the force necessary to maintain a uniformly stretched chain. The larger the value of ℓ the smaller the force which is necessary to maintain the chain in a stretched state. Thus the force which maintains the chain in a stretched state reaches a maximum negative value when the chain goes over from a symmetric configuration to the more stable asymmetric one. It is this maximum value of the force which must be taken into consideration in estimating the breaking strength of crystals. In the case of a strongly extended chain, there are only asymmetric stable configurations. Acknowledgments are expressed to A.N.Orlov who directed this work. There are 4 figures and 3 Soviet references (one a Russian translation).

Card 4/4

LUCHNIK, N.V.; PLISHKIN, Yu.M.; TALUTS, G.G.

Mechanisms of the self-duplication of elementary cell structures. Pt.2: Physical principles of the spiral form of certain macromolecules and the possible mechanism of DNA replication. TSitologiia 2 no.1:57-61 Ja-F '60. (MIRA 13:5)

1. Otdel biofiziki i radiobiologii Instituta biologii Ural'skogo filiala i Otdel teoreticheskoy fiziki Instituta fiziki metallov AN SSSR, Sverdlovsk.
(NUCLEIC ACIDS) (MOLECULES)

S/126/60/009/02/004/033
E032/E314

AUTHOR: Plishkin, Yu.M.

TITLE: The Form of a Crack on the Microscopic Model of a Crystal

PERIODICAL: Fizika metallov i metallovedeniye, 1960, Vol 9, Nr 2, pp 178 - 183 (USSR)

ABSTRACT: An attempt is made, within the framework of the microscopic model, to formulate the problem of the stability of a crack. The crystal is loaded upon as an infinite plate, having a thickness h (Figure 1). The crystal consists of N + 1 atomic planes and the potential energy of interaction between atoms belonging to neighbouring atomic layers is a function of distance only and is given by Eq (1), where r is the distance between the atoms and $A, B > 0$, $\nu > \mu > 0$ are constants. The interaction with atoms in planes not in the immediate neighbourhood is neglected. For the sake of simplicity only the two-dimensional problem is considered. It is assumed that the distortion of the crystal does not depend on the coordinate measured in the direction perpendicular to the plane of the drawing (Figure 1) and that the crystal is

Card1/3

S/126/60/009/02/004/033
E032/E314

The Form of a Crack on the Microscopic Model of a Crystal

subject to uniform strain. The problem consists in finding all the possible stable configurations of the atomic layers or, in other words, it is desired to find an expression for the potential energy of the model and then determine its minimum. The interaction energy for any two atomic planes is written down in the form given by Eq (2), where v is given by Eq (1) and $y(x)$ denotes the distance between the interacting elements of length dx on neighbouring lines of atoms. The potential energy of interaction of all the atomic layers is then of the form given by Eq (5). If Hook's law holds, then if the bending of the atomic planes is taken into account, the potential energy, subject to the conditions given by Eq (4), is of the form given by Eq (6), where α is the Hook's constant. The first sum under the integral sign in Eq (6) represents the interaction of atomic layers with each other, and the second, the change in the energy due to the bending of the atomic layers. In order to find configurations corresponding to minimum energy, a variational procedure must be applied to the

Card2/3

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S/020/61/137/003/012/030
B104/B214

18.9200 1418, 1555, 1145

AUTHOR: Plishkin, Yu. M.

TITLE: The stability of microfissures in a solid

PERIODICAL: Doklady Akademii nauk SSSR, v. 137, no. 3, 1961, 564-567

TEXT: The stability of fissures is investigated as a plane problem in the frame of a microscopic model introduced by the author in a previous paper (Ref. 7: Yu. M. Plishkin, Fiz. met. i metalloved., 9, 176, (1960)). The problem leads to a search for the minima of the interaction energy of the atoms in a crystal lattice. As shown in the previous paper, the increment of the potential of the interaction energy in the section (-R,R) in the chosen model may be represented by the functionals:

$$V_1(z_1, z_2, \ldots, z_N) =$$

$$= \int_{-R}^{R} \left\{ \frac{1}{r_0} \sum_{i=1}^{N} v\,[z_i(x) - z_{i-1}(x)] + \alpha r_0 \sum_{i=1}^{N-1} \left(\sqrt{1 + (z_i')^2} - 1 \right)^2 \right\} dx, \qquad (2)$$

где

$$z_i = z_i(x), \quad i = 1, 2, \ldots, N, \qquad (3)$$

Card 1/ 4

(3) describes the i-th atomic layer; N+1 is the number of atomic layers in the stretching direction, α is the Hooke's constant, and r_0 the normal atomic distance. $z_i(x)$ satisfies the binding condition $\sum_{i=1}^{N}\{z_i(x) - z_{i-1}(x)\} = h$, where h is the thickness of the crystal and characterizes the stretching state. The following assumptions are made for simplifying the problem: 1) Instead of a general solution a particular solution is sought based on the assumption that in an ideal crystal not more than one fissure appears in the stretching direction. 2) All distances between the atomic layers with the exception of that in which the fissure is formed are equal. Thus the unknown functions z_i can be reduced to the functions $y(x)$ which describe the thickness of the fissure. This leads to

$$V_1(y, y') = \frac{1}{r_0}\int_{-R}^{R} [E[y(x)] + \beta(y')^4]\,dx, \qquad (6)$$

$$\frac{\partial E}{\partial y} - 12\beta\left(\frac{dy}{dx}\right)^3\frac{d^3y}{dx^3} = 0, \qquad (7)$$

The stability of microfissures...

Here, β is a constant depending on N, and $E(y) = v(y) + (N-1)v\left\{(h-y)/(N-1)\right\}$. The extremum of y(x) for which the functional (6) has a minimum must satisfy Eq. (9) in which b is the

$$\frac{dy}{dx} = (3\beta)^{-1/4}[E(y) - E(b)]^{1/4}, \qquad (9)$$

in which b is the thickness of the fissure at its maximum width. Further, the ends of the extremum must lie on the straight line $y = h/N$. It is shown further that no extremum with movable ends exists giving a minimum of the functional (6). This signifies that no stable fissures can be formed in an ideal crystal lattice. Thus the potential energy V of a crystal is a monotonic function of the fissure dimensions R. The following conclusions are drawn: 1) No stable fissures can be produced in an ideal crystal. In the absence of a barrier a fissure in an ideal crystal begins to propagate immediately on its formation at a rate comparable to the velocity of sound. In the real bodies a microfissure expands into a rupture. A. N. Orlov is thanked for his interest in the

Card 3/4

The stability of microfissures... S/020/61/137/003/012/030
B104/B214

work. There are 7 references: 5 Soviet-bloc and 2 non-Soviet-bloc. The two references to English language publications read as follows: Ref. 2: A. A. Griffith, Phil. Trans. Roy. Soc., A. 221, 163 (1920); Ref. 4: A. N. Stroh, Proc. Roy, Soc., A.223, 404, (1954); Phil. Mag., 3, 597, 625 (1958); F. E. Fujita, Acta Met., 6, 543 (1958).

ASSOCIATION: Institut fiziki metallov Akademii nauk SSSR
(Institute of Physics of Metals, Academy of Sciences USSR)

PRESENTED: November 19, 1960, by G. V. Kurdyumov, Academician

SUBMITTED: November 14, 1960

Card 4/4

S/207/62/000/002/009/015
D237/D302

AUTHOR: Plishkin, Yu. M. (Sverdlovsk)

TITLE: On the theory of primary crack formation during the brittle fracture of a crystal

PERIODICAL: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 2, 1962, 95-103

TEXT: A plane crystal model with a crack wedged by a dislocation with the Burghers vector of n interatomic distances is investigated and the relation between the degree of elongation of the crystal ε and a thickness of the dislocation wedge n, determining the condition for a brittle fracture of a crystal, is obtained. Also the shape of a crack is studied w.r. to the magnitude nr_o of the Burghers vector of the stabilizing dislocation, and the condition for its stability is determined. On the basis of the results obtained, the author states the following conclusions: 1) In the elongated crystal, a dislocation with a large Burghers vector pre-

Card 1/3

vents the closing of the crack and stabilizes it. Increase in thickness of the wedge leads to spreading of the crack. The higher the elongation, the thinner wedge is sufficient to cause the spreading. 2) Number of dislocations necessary for the formation of a spreading crack even on the elongation of 0.1% does not exceed the number of dislocations in the avalanche, generated by one Frank-Reed source (10^2 - 10^3). 3) There exists a scale effect, and the smaller the crystal, the larger the elongation necessary for spreading the crack. 4) Critical thickness of the dislocation wedge assuring the spreading of the crack depends on two parameters μ and ν of the interaction energy v(r) only. For different materials with the same μ and ν, the critical value, with constant elongation, will be directly proportional to the modulus of elasticity. The author thanks A. N. Orlov for suggestions. There are 8 figures and 19 references: 11 Soviet-bloc and 8 non-Soviet-bloc. The 4 most recent references to the English-language publications read as follows: A. N. Stroh, Phil. Mag., 1958, 3, 597; A. H. Cottrell, Trans. AIME, 1958, 212, 192; J. D. Echelby, F. C. Frank and F. R. N. Nabarro, Phil. Mag.,

On the theory of ... S/207/62/000/002/009/015
D237/D302

1951, 42, 351; G. R. Irwin, J. Appl. Mech., 1957, 24, 361.

SUBMITTED: October 30, 1961

Card 3/3

L 28011-66 EWT(m)/EWA(d)/T/EWP(t)/ETI IJP(c) JD

ACC NR: AP6018166 SOURCE CODE: UR/0126/65/019/002/0182/0190

AUTHOR: Grinberg, B. A.; Plishkin, Yu. M.

ORG: Institute of the Physics of Metals, AN SSSR (Institut fiziki metallov AN SSSR)

TITLE: Investigation of segregation of atoms at the antiphase boundary

SOURCE: Fizika metallov i metallovedeniye, v. 19, no. 2, 1965, 182-190

TOPIC TAGS: ordered alloy, asymptotic property, brass, nonstoichiometric compound

ABSTRACT: The antiphase boundary is analysed in an ordered alloy of type β -brass of non-stoichiometric composition. Investigation of the system of equations for equilibrium concentrations and long-range order makes possible the production of some overall results relative to the distribution of concentration in a crystal with an antiphase boundary. Numerical solution of the system produces values of segregation at the antiphase boundary in alloys with various deviations from stoichiometry at various temperatures. It is concluded that at the antiphase boundary in an ordered alloy of non-stoichiometric composition there should be segregation of atoms of the component in excess over stoichiometry. Analytic expressions are obtained which describe the asymptotic behaviour of the concentration and degree of long-range order at great distances from the antiphase boundary. The concentration of the excess component continuously falls off from its maximal value c_1 with increasing distance from the boundary. Orig. art. has: 32 formulas and 1 figure. /JPRS/

SUB CODE: 11, 20 / SUBM DATE: 31Jul64 / ORIG REF: 001 / OTH REF: 003

Card 1/1 UDC: 539.2.01

SOLODAR', M.B., inzh.; PLISHKIN, Yu.S., inzh.

Problems of increasing the operational reliability of crane elements. Prom.stroi. 42 no.11:9-13 N '64. (MIRA 18:8)

SOLODAR', M.B., inzh.; PLISHKIN, Yu.S., inzh.

Defects in the design of steel elements for conveyor trestles. Prom. stroi. 41 no.7:33-36 Jl '64. (MIRA 17:8)

1. Leningradskoye otdeleniye Gosudarstvennogo instituta po proyektirovaniyu, issledovaniyu i ispytaniyu stal'nykh konstruktsiy i mostov.

PLISHKO, A.I.

"Animal husbandry in England" by N.M.Burlakov. Reviewed by A.I. Plishko. Zhivotnovodstvo 22 no.7:94 '60. (MIRA 16:5)

1. Zamestitel' nachal'nika Glavnogo upravleniya zhivotnovodstva Ministerstva sel'skogo khozyaystva UkrSSR.
(Great Britain--Stock and stockbreeding) (Burlakov, N.M.)

PLISHKO, Andrey Illarionovich; KOVALENKO, O.I., red.; NEMCHENKO, I.Yu. [Niemchenko, I.IU.], tekhn. red.

[Organization of breeding work in animal husbandry] Organizatsiia pleminnoi roboty v tvarynnytstvi. Kyiv, Derzhsil'hoskvydav URSR, 1962. 156 p. (MIRA 16:5)
(Ukraine--Stock and stockbreeding)

PLISHKO, D.S.

Increasing the wear, heat and acid resistance of electrolytic chromium coatings by carburizing. Izv. vys. ucheb. zav.; chern. met. no.8:138-144 '60. (MIRA 13:9)

1. Kiyevskiy institut Grazhdanskogo vozdushnogo flota.
(Chromium plating) (Cementation (Metallurgy))

S/148/60/000/008/009/018
A161/A029

AUTHOR: Plishko, D.S.

TITLE: Raising the Resistance of Electrolytic Chrome Coatings to Wear, Heat and Acid by Carbidization

PERIODICAL: Izvestiya vyssikh uchebnykh zavedeniy. - Chernaya metallurgiya, 1960, No. 8, pp. 138 - 144

TEXT: A laboratory investigation has been carried out with chrome-plated "45" steel in friction with bronze, aluminum, magnesium and grey perlitic cast iron with the use of a "KE-2" (KYe-2) test machine described previously (Ref. 3), testing specimens by friction with a disk. Surfaces were studied by metallographic, spectral and X-ray analysis. Complex physico-chemical processes were noticed to take place at a certain load and friction rate. Chemical compounds of metal with oxygen and chrome grains stick to the metal, penetrate into softer metal and produce an abrasive effect on the chrome surface. In friction with grey cast iron, formation of black powder and grey films was observed. They proved to consist of Cr_7C_3 and $(FeCr)_7C_3$ carbides with 1,500 - 1,800 kg/mm^2 hardness and high resistance to wear, acids and heat up to 950°C. Grey layers of 20

Card 1/2

S/148/60/000/008/009/018
A161/A029

Raising the Resistance of Electrolytic Chrome Coatings to Wear, Heat and Acid by Carbidization

μ were obtained at the steel/chrome boundary and 50-μ layers on the top of chrome by carburization for 5 h in 900°C in a mass consisting of 50% (by weight) charcoal, 20% Na_2CO_3 and 30% Fe. The investigation results confirmed the data of works conducted by V.I. Arkharov, S.A. Nemnonov and V.N. Konev (Refs. 5 and 6). Wear of the chrome coating in dry friction with grey cast iron at 0.5 - 12 m/sec was 8 to 10 times lower than with bronze. Carbidization is recommended. There are 7 figures and 6 Soviet references.

ASSOCIATION: Kiyevskiy institut Grazhdanskogo vozdushnogo flota (Kiyev Institute of Civil Aviation)

SUBMITTED: December 17, 1959

Card 2/2

PLISHKO, D.S.

Investigating wear processes in chromium plated parts of airplane engines. Izv. vys. ucheb. zav.; av. tekh. 3 no. 2:157-167 '60. (MIRA 14:5)

1. Kiyevskiy institut Grazhdanskogo vozdushnogo flota.
(Chromium plating—Testing)

PLISHKO, D. S., Card of Tech Sci — (diss) "Investigation of the Process of Wearing-out of Airplane Engine Parts Which Are Plated Electrolytically by Chromium," Kiev, 1959, 15 pp (Kiev Institute of the Civil Air Fleet) (KL, 4-60, 120)

S/122/60/000/008/002/006
A161/A029

AUTHOR: Plishko, D.S., Engineer

TITLE: Investigation of the Wear Processes in Electrolytic Chrome Coatings

PERIODICAL: Vestnik mashinostroyeniya, 1960, No. 8, pp. 22-26

TEXT: Information is given on results of an experimental investigation of the wear resistance of smooth electrolytic chrome coating. The KE -2 (KYe-2) test machine used has been described (Ref. 1). The test consists in dry friction of the end of a cylindrical specimen on the flat side of a disk. Disks and specimens were of "45" steel with chrome coating, bronze and grey perlitic cast iron. The grey film forming on chrome in tests was investigated by X-ray analysis and proved to consist of chrome carbides. Carbidization was observed before by V.I. Arkharov and S.A. Nemnonov (Ref. 2) on chrome plated specimens heated in cast iron chips, and later carbidization was studied in a gas medium of hydrogen mixed with gasoline vapors (Refs. 3,4). To study the nature and properties of the grey film, specimens were carburized in charcoal with $BaCO_3$, Na_2O_3 and K_2CO_3. Sufficient carburization was obtained only with addition of iron powder into the mixture. A 50-micron carbide film was obtained in the car-

Card 1/2

PLISHKO, D.S., starshiy prepodavatel'

Improving the wear resistance of chromium plating. Izv.vys.ucheb. zav.; mashinostr. no.6:155-159 '60. (MIRA 13:7)

1. Kiyevskiy institut grazhdanskogo vozdushnogo flota.
(Chromium plating)

80966

S/147/60/000/02/018/020
E191/E481

18.9510
18.7400

AUTHOR: Plishko, D.S.

TITLE: Investigation of the Wear Processes in Aircraft Engine Components with Electro-Plated Chromium Coatings

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Aviatsionnaya tekhnika, 1960, Nr 2, pp 157-167 (USSR)

ABSTRACT: Electrolytically deposited chromium generally possesses good corrosion resistance, hardness and wear resistance. Under certain conditions, however, the wear of smooth chromium coats was observed to be eight times greater than that of case hardened or nitrided steels. To determine the causes of the wide range in wear rates, the exhaust valve, the driving and stationary pinions of the reduction gear, the auxiliary drive shaft, the cylinder liner and some other components of a radial aero-engine were investigated. The components were selected during overhaul of the engine. Statistical analysis was applied to the defect reports in repair shops. Each component was accompanied by a rating card which stated the properties of the material and the surface after manufacture or

Card 1/4

...pecific
...combined with rubbing
...and lubrication is inadequate,
...smooth electro-plated chromium

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E191/E481

Investigation of the Wear Processes in Aircraft Engine Components with Electro-Plated Chromium Coatings

exceeds that of alloy steels by a factor of almost 8. The absolute wear of chromium coating paired with bronze sealing rings is two or three times greater than the wear of the bronze ring. During wear, chemical compounds are formed embedded in the bronze component which have an abrasive action on the chromium surface. Sometimes, chromium grains are discovered on the surface of the bronze components. At relative speeds of 2 to 6 m/sec and specific pressures of 10 kg/cm^2, under conditions of dry friction, the wear of chromium coats paired with grey iron is lower than that of chromium coats paired with bronze by a factor of 4 to 10. This is explained by the concentration on the chromium surface of the products of wear and the formation of chromium carbides with a micro-hardness reaching 1800 kg/mm^2. Under the above operating conditions, therefore, grey iron should be paired with chromium plated components. The rubbing surfaces of the iron parts should be coated with lead. Cast iron sealing

Card 3/4

80966
S/147/60/000/02/018/020
E191/E481

Investigation of the Wear Processes in Aircraft Engine Components with Electro-Plated Chromium Coatings

rings should be lead coated not only on the cylindrical external surface but also on the side walls. As a result of laboratory tests, carbide treatment of electro-plated chromium coatings was shown to raise substantially the wear resistance of chromium when working with bronze or cast iron under conditions of boundary lubrication or dry friction. There are 8 figures and 5 Soviet references.

ASSOCIATION: Kiyevskiy institut Grazhdanskogo vozdushnogo flota (Kiyev Institute of the Civil Air Fleet)

SUBMITTED: January 25, 1960

Card 4/4

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AUTHOR: Plishko, D.S.

TITLE: Raising the Resistance to Wear of Electrolytic Chrome Coatings

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. - Mashinostroyeniye, 1960
No. 6, pp. 155 - 159

TEXT: Chrome-plated "45" steel has been subjected to friction tests with bronze, aluminum, magnesium and grey perlitic cast iron with the use of the "KE-2" (KYe-2) friction test machine testing specimens by friction with a gauged disk. Surfaces were studied by metallographic, spectral and X-ray analyses. Complex physico-chemical processes were noticed to take place at a certain load and friction rate. Chemical compounds of metal with oxygen and chrome grains stick to the metal, penetrate into softer metal and produce an abrasive effect on the chrome surface. In friction with grey cast iron, formation of black powder and grey films was observed. They proved to consist of Cr_7C_3 and $(FeCr)_7C_3$ carbides with 1,500 - 1,800 kg/mm^2 hardness and high resistance to wear, acids and heat up to 950°C. Grey layers of 20 μ were obtained at the steel/chrome boundary and 50-μ layers on the top of chrome by carburization for 5 hours in 900°C in a mass consisting of

Card 1/2

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A161/A029

Raising the Resistance to Wear of Electrolytic Chrome Coatings

50% (by weight) charcoal, 20% Na_2CO_3 and 30% Fe. Wear of the chrome coating in dry friction with grey cast iron at 0.5 - 12 m/sec was 8 - 10 times lower than with bronze. Carbidization is recommended. There are 7 figures and 6 Soviet references.

ASSOCIATION: Kiyevskiy institut Grazhdanskogo vozdushnogo flota (Kiyev Institute of Civil Aviation)

SUBMITTED: December 17, 1959

Card 2/2

R-3

USSR/Diseases of Farm Animals - Diseases Caused by Protozoa.

Abs Jour : Ref Zhur - Biol., No 10, 1958, 45441

Author : Suksov, B.I., Plishko, M.T.
Inst : -
Title : The Diagnosis and Methods of Combatting Bovine Trichomoniasis.

Orig Pub : Byul. sil's'kogospod. informa Zhitom. obl. vid. t-va dlya poshir. polit. ta nauk. znan', 1957, No 3, 107-109

Abstract : No abstract.

Card 1/1

PLISHKO, N.T. (Zhitomir)

Use of indiced sleep in poisoning from Cicuta virosa L. Pat. fiziol. i eksp. terap. 4 no. 5:61-62 S-O '60. (MIRA 13:12)

1. Iz Zhitomirskoy oblastnoy veterinarno-bakteriologicheskoy laboratorii.
(WATER HEMLOCK--TOXICOLOGY) (SLEEP--TRERAPEUTIC USE)

PLISHKO, N.T.

Effect of the number of spermatozoids on the fertilization in swine. Zhur. ob. biol. 23 no.2:127-134 Mr-Ap '62. (MIRA 15:5)

1. Research Institute of Swine Breeding of Poltava.
(FERTILIZATION (BIOLOGY)) (SWINE BREEDING)

PLISHKO, N.T., vet. vrach.

Some data for the study of the regiment and methods of disinfection. Veterinariia 34 no.10:67-68 O '57. (MLRA 10:11)

1. Zhitomirskaya oblastnaya veterinarno-bakteriologicheskaya laboratoriya.

(Disinfection and disinfectants)

PLishko, N. T.

Inhibiting the toxic effects of water hemlock in the animal body. N. T. Plishko (Agr. Inst., Belotserkov). *Farmakol. i Toksikol.* 18, No. 4, 47–8(1955).—The lethal doses of cicutoxin (as *Cicuta* root ext. 1:3) in rabbits, frogs, and guinea pigs are 0.02, 0.04–0.05, and 0.08–0.09 ml./g., resp. Thiopental narcosis is an effective antidote; Et_2O and Cl_3C-$CHO.H_2O$ are ineffective. Julian F. Smith

1 - Chair Pathological Physiology